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Extension Workers' Use of Motivation Measures for Agripreneurial Engagements with Rural Dwellers in Edo State, Nigeria

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Abstract
This study assessed extension workers (EWs) use of motivation measures (MMs) for agripreneurial activities (AAs) among rural dwellers (RDs). The population study involved 63 EWs in the Edo State Agricultural Development Programme (ESADP) zones. Data were collected using structured questionnaire and analyzed using frequency, percentages and Pearson Product Moment Correlation. Results show that EWs highly engaged RDs in poultry ($\bar{x}$ =3.61), arable crops ($\bar{x}$ = 2.91) and tree crops ($\bar{x}$ =2.90) production. The extension methods used to engage RDs were farm and home visits ($\bar{x}$ =3.89), group training (2.79) demonstration (2.52) and ICT/phone ($\bar{x}$ =2.50). The strategies employed included cooperative-based trainings ($\bar{x}$ =3.30), facilitation of multi-actors partnership and linkages ($\bar{x}$ =2.69). The significantly used motivation measures used by EWs included provision of social and emotional support ($\bar{x}$ =3.42), recognition of good performance ($\bar{x}$ =3.33) and supervision of RDs activities ($\bar{x}$ =3.08). EWs were challenged by inadequate social and emotional skills ($\bar{x}$ =3.36), low technical skills in some agriculture enterprises ($\bar{x}$ =3.04). Significant positive relationships existed between age (r=0.216; p=0.019), working experience (r=0.176; p=0.046), monthly salary (r=0.222; p=0.016) and EWs' use of MMs among RDs for AAs. Older, experienced and higher income earning EWs used MMs more. Continuous training in social and technical skills and motivation of EWs are recommended.

Keywords: Motivation measures usage, agripreneurship, extension workers

Introduction

Innovative, market-oriented and agribusiness strategies becomes relevant considering the importance of smallholder agriculture for economic growth and rural development in developing countries including Nigeria. Agripreneurship which is entrepreneurship in agriculture is not necessarily self-employment. it is a concept that encompasses transforming an idea or vision into a new business or new venture creation, or the expansion of an existing business, by an individual, a team of individuals, or an established business. Entrepreneurs are usually creative, seize opportunities, accept risks, and can quickly adapt business strategies to changing environments. They are often innovators, young minds (Kambhampati, 2026). Agripreneurs are influenced by external, systemic factors, such as economic and social barriers, policies, and regulations (FMARD, 2020) which limit their potentials and benefits. These constitute the constraints that affect rural entrepreneurs

especially smallholders hence they need to be motivated to engage in goal directed behaviour that will make their agribusinesses succeed.

Motivation could be an incentive, strategy, measure or reason for doing something. It encourages action (Sarie et al, 2023; Tamsan, 2022). Examples include special allowances, needs met, policy, fringe benefits and supervision. Farmer motivation often focus on their willingness to adopt new practices, learn new skills, and engage with extension services (Windon, et al. 2025; Retno & Khilma 2025). Motivation to adopt new agricultural technologies is often influenced by the perceived economic benefit and long-term sustainability. Young farmers' motivation for instance is often driven by economic reward, self-efficacy and active participation in farmer groups.

Motivation of farmers and extension workers often highlights how the performance and drive of the extension agent directly impact the adoption and productivity, tangible increases in yields that directly improve farmer and family's standard of living (Windon et al, 2025; Yurisinthae & Yusra, 2025; Retno, & Khilma, 2025). Farmer motivation thus targets learning, skill development and the adoption of new technologies. Farmers' motivation for learning and development is strongly associated with their self-leadership competencies while entrepreneurial motivation among young farmers is often driven by self-efficacy and participation in social media and farmer groups (Yurisinthae & Yusra, 2025; Sa'adu et, al., 2022). They found that the need for achievement and power motivates extension workers to carry out their duties, which include motivating farmers in order to enhance their achievements by influencing farmers' behaviour. Examples include measures such as participation in farmer groups, trainings, empowerment efforts, mentorship, digitization (Sa'adu et, al., (2022) and other strategies aimed at building their capacities for enhanced agripreneurial outcomes. Different extension methods are usually employed by the EAs to engage RDs in AAs. Such methods include farm and home visits, demonstrations, (individual, group, mass methods which could be visual, audio or audio-visual).

Extension service (ES) is expected to play a crucial role in supporting farmers to become successful agripreneurs. They provide important information and access to people, markets, and financial services and train the farmers in the required managerial and other functional skills. Extension and advisory services can also influence policies and regulations to create an agripreneurship-friendly environment, reduce barriers, or change prevailing values in societies to favour agripreneurs (Izuogu et. al, 2024; John, 2026).

The theoretical framework draws from McClelland's Need for Achievement. The theory posits that individuals are motivated by three learned needs which are achievement, affiliation and power. Also, that those with a high need for achievement are driven by personal accomplishment, prefer moderate challenges, seek immediate feedback, and take personal responsibility for outcomes McClelland's work. The theory distinguishes achievement motivation from the needs for power and affiliation, noting that high achievers perform best in entrepreneurial and competitive settings where they can set challenging yet attainable goals. This framework has been applied to this study. The need for accomplishment on the part of the EWs should drive their use of MMs in AAs among RDs. EWs need equally have growth needs, desire for personal development and meaningful work, which for extension workers manifests as opportunities for training, autonomy in programme design, and recognition for impacting farmers' productivity (Retno, & Khilma, 2025;).

Effective agricultural extension services (AES) requires motivation of professionals on one hand and rural dwellers on the other to engage in agripreneural activities (AAs) that can help better their lots. To influence clients by changing their attitudes, knowledge, skills, and aspirations for agricpreneurship development. Most studies (Izuogu et. al, 2024; Omoregbee & Koyenikan, 2022) focused on motivation of extension personnel with respect to intrinsic and extrinsic motivation of agricultural extension workers by the extension service. However, limited attention is given to the study of farmers' motivation by the extension system to ensure impact on the client system. However, RDs could not be said to be fully entrepreneurially inclined due to various challenges such as inadequate incentives, poor contact with EWs, poor social infrastructures and poor motivation of extension personnel themselves. It also important to investigate if EWs use measures to motivate RDs for agripreneurship engagements because of its relevance to agriculture and rural development.

Objectives

This study assessed the use of motivation measures by extension workers for agripreneurial activities (AAs) among rural dweller in Edo State, Nigeria. Specifically, the study;

1. described the personal characteristics of the Extension workers in Edo State;
2. identified the agripreneurial activities in which extension workers engage the rural dwellers;
3. identified the methods employed to engage the rural dwellers in agriprenership;
4. identified the strategies adopted to implement agriprenership among the rural dwellers;
5. ascertained the extent to which extension workers used motivation measures in agrepreneurial engagement with rural dwellers; and
6. identify the challenges to motivation of rural dwellers for AAs.

Ho: There is no significant relationship between personal characteristics of EWs and the use of motivation measures for agripreneural engagement with rural dwellers.

Methodology

This study was carried out in Edo-State, Nigeria. The State has a land area of 17,802 km^2 (6,873 m^2). It lies within the coordinates 05.44°N to 07.34°N latitude 05.4°E to 06.45°E. By population census, 2006 it has a total of 3,218,332 and a density of 180/km^2 (470/sq m^2). The climate is tropical, with two distinct seasons: the dry and wet seasons. The annual precipitation is between 1500mm and 3000mm with about 200 rainfall days. Edo State is made up of eighteen (18) Local Government Areas. The major occupations of its inhabitants include farming, trading public service and handicraft. The State is noted for the production of agricultural products such as rubber, cocoa, cashew nut, palm oil plantain lumbering, fishing etc.

The study population comprised all the seventy-two extension staff of the Edo State ADP in the three zones of the State who participate in MTRM and FNTs at headquarters and zonal levels. The data were collected using structured questionnaire.

Use of motivation measures (MMs) was measured on a four point rating scale highly used =4, used = 3, rarely used=2, not used =1 for 17 motivation items. Mean ≥ 2.5= Effective while minimum score= 17, maximum score= 68.

Perception of constraints to effective motivation was measured on a 4 point Likert type scale of 4= Very serious, 3= serious, 2= Less serious, 1=not serious. Mean ≥ 2.5= Serious.

Percentages and Means were used to present the data while the hypothesis was tested with Pearson Product Moment Correlation (PPMC). Statistical Package for Social Sciences (SPSS) computer software was used to run the analyses.

Results and Discussion

Personal Characteristics of Respondents

Table 1 presents the personal characteristics of the EWs. Results show that 52.8 % of extension agents were females, with a mean age of 40.1 years, the majority (84.9%) were married. This result is in line with. This is an indication that the extension workers work group in the state is characterize by those that are well experience and those not well experience. This can be attributed to the fact that respondents majority were still young and have not stayed on the job for long. This result is line with findings of Omoregbee & Koyenikan (2022) who reported that extension workers had mean working experience of 10 years.

Table 1: Personal characteristics of extension agents

Variable	F = 63	%	Mean	Std. dev.
Sex				
Male	33	52.7		
Female	30	47.3		
Age				
less than 30	15	23.7		
31 – 40	21	33.3	40.1	9.77
41 – 50	18	29.0		
51 and above	9	14.0		
Marital status				
Single	8	12.9		
Married	54	84.9		
Divorced	1	2.2		
Working experience				
Less than 5	28	44.1		
6 – 10	10	16.1	10	7.95
11 and above	25	39.8		
Highest level of education				
OND	1	2.2		
NCE	3	4.3		
HND	12	19.4		
B.sc	37	59.1		
Post graduate	10	15.1		
Family size				
1 – 5	12	19.4		
6 – 10	20	32.3		
11 – 15	24	37.6	4	2.13
15 and above	7	10.8		
Grade level				
7	9	14.0		
8	11	17.2		
9	12	19.4		
10	11	17.2	10	2.24
12	12	19.4		
14	8	12.9		
Salary per month				
Less than 50,000	20	31.2		
50,000 – 100000	35	55.9	71,462.37	25,591.76
100000 – 200000	8	12.9		
Less than 50,000	20	31.2		

Source: Field survey, 2021

Agripreneurial Activities in which Extension Workers Engage Rural Dwellers

Fig. 1 shows the agripreneurial activities which extension agents engaged RDs. Results show that EWs highly engaged RDs in poultry production ($\bar{x}$= 3.61), arable crop production ($\bar{x}$= 2.99), horticultural/vegetables ($\bar{x}$=2.93), Tree crops production, rubber cocoa dominant ($\bar{x}$= 2.91). However, there was low level of engagement in agripreneurial activities that are related to agro-marketing ($\bar{x}$= 2.408), agro-inputs ($\bar{x}$= 2.08), agro-processing ($\bar{x}$= 2.19). The high level of engagement with RDs in poultry production could be attributed the fact that it involved production of improved and local breeds, arable crop production in the State involves cultivation of dominant crops like cassava, yam, maize, melon which are staple foods in the state. Horticultural crops include vegetables and fruits while in tree crop production, oil palm, rubber cocoa were dominant. Agro-processing covers all the crops and livestock enterprises. This result agrees with findings of Ahmed et.al, (2025) on involvement in building capacities of women. This implies that extension workers are involved in different agricultural enterprises in development process but their level of involvement will vary. This can be attributed to extension training background and available resources to carry out effective extension service delivery. The low engagement of rural dwellers in off-farm agripreneural activities is an indication that value addition to produce and maximization of profits from agricultural enterprises will be limited. Value chain approach might need to be pursued vigorously.

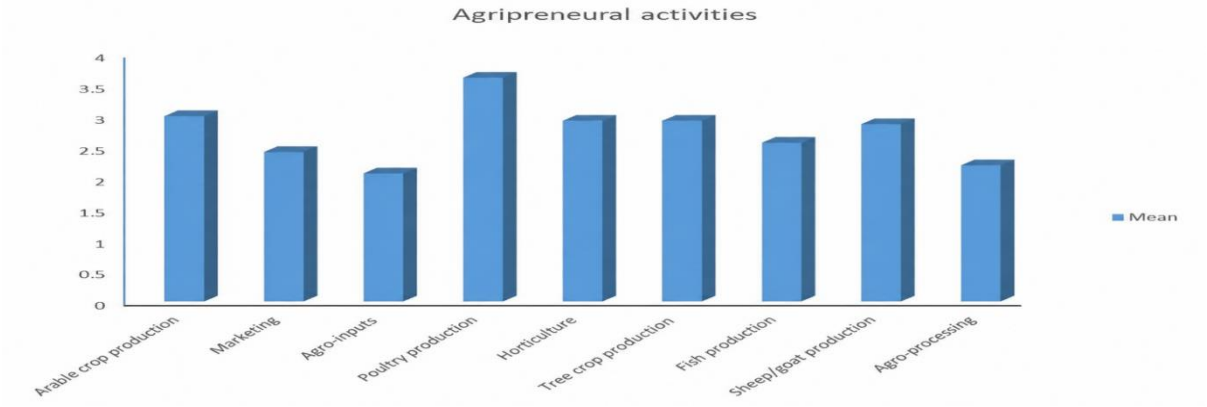

Fig. 1: Agripreneurial activities in which extension workers engage rural dwellers

Methods used for Agri-preneurial Development by Extension Agents

Table 2 presents the extension methods that the EWs used for engaging the RDs. Results in the Table 2 show that extension agents frequently used farm and home visits ($\bar{x}$ =3.01), group training ($\bar{x}$ =2.78) group demonstration ($\bar{x}$ =2.52) and digital/mobile phone ($\bar{x}$ =2.50) in agripreneurial development activities. This is an indication that varieties of extension methods were used at varying degrees. This is in line with extension principles in order to achieve the desired impact. The high usage of individual and methods in the situation where there is shortage of extension workers is an indication that most communities will not be able to access the extension services needed to enhance their entrepreneurial development. However, ICT adoption is breaking the monopoly of media houses as confirmed by Tafida et. al., (2021). Sa'adu et. al., (2022) found a relationship between motivation and ICT adoption among extension workers. The low level of mass method usage could be

attributed to the high cost involved in airing and printing programmes in addition to the poor funding constraints in the ADP.

Table 2: Extension methods used for agripreneurship development by extension workers

Methods	Mean	Std Dev.	Rank
Farm and home visit	3.01*	.206	1st
Group farmers training	2.79*	.492	2nd
Group demonstration	2.52*	.238	3rd
ICT-Based Training (mobile phone)	2.50*	.363	4th
Radio Programme	2.31		5th
Agricultural shows and fairs	2.29	.379	6th
TV programme	2.21	.388	7th
Print media programme	1.89	.413	8th

Source: Field survey, 2025 ≥ 2.5= Used

Strategies Adopted for Agripreneurial Engagement of RDs by Extension Agents

Table 3 presents the strategies adopted for agripreneurial engagement of rural dwellers. The results in table show that extension workers highly used cooperative societies-based trainings activities ($\bar{x}$=3.30) which ranked first suggesting that respondents considered it the most used strategy for motivating rural dwellers for agriprenurial activities. This however contradicts Ahmed, et. al., (2025) which reported negative influence of farmers' associations in motivating women. This was followed by multi-actors partnership facilitation ($\bar{x}$=2.69), cooperative societies formation and development ($\bar{x}$= 2.60), and farmers' group development ($\bar{x}$= 2.58), all of which met the acceptance criterion and were therefore perceived as important strategies. These findings imply that collective action, networking, and institutional collaboration play significant roles in enhancing farmers' access to resources, information, markets, and support services which corroborates Izuogu et.al., 2024) On the other hand, community-based initiatives ($\bar{x}$= 2.45), agricultural produce storage facilities ($\bar{x}$= 2.27), and advocacy in communities ($\bar{x}$= 1.84) were ranked lower and did not meet the acceptance threshold, indicating that respondents viewed them as less effective or less immediately impactful. The findings underscore the importance of strengthening cooperative structures and fostering partnerships among stakeholders as key strategies for improving agricultural productivity and rural development.

Table 3: Strategies adopted for agripreneurship development by extension workers

Strategies	Mean	Std. Dev.	Rank
Conduct cooperative-based trainings	3.30	.515	1st
Multi-actors Partnership and linkage facilitation	2.69	.620	2nd
Implement market-oriented initiatives	2.60	.508	3rd
Provision of digital solutions to RDs challenges	2.57	.498	4th
Ensure inclusion, mentorship, education and Community-Based Initiatives	2.45	.395	5th
Provision of information on value addition-agro-processing and produce storage facilities	2.27	.419	6th
Advocacy for Communities	1.84	.444	7th
Linkage with credit facilitate, inputs and other resources	1.82	.327	8th

Source: Field survey, 2025 ≥ 2.5= Used

($\bar{x}$ =3.30), facilitation of multi-actors partnership and linkages ($\bar{x}$ =2.69)

Extension Workers' Use of Motivation Measures for Agripreneurial Engagements with Rural Dwellers

Table 4 presents extension workers' use of motivation measures for agripreneurial engagements with rural dwellers, Results in the table show measures used by extension agents to motivate rural people for community development activities but to different extent. Results revealed that extension agents always used measures such as addressing social and emotional support ($\bar{x}$= 3.42), recognition of good performance ($\bar{x}$= 3.33), supervision of activities ($\bar{x}$= 3.08) suggesting the importance of acknowledgment and guidance. Giving rural dwellers opportunity to advance ($\bar{x}$= 2.88) and provision of working incentives like transport and refreshment ($\bar{x}$= 2.87). Results further showed that extension agents also used other measures but at lower levels. Measures such as; linkage to resources to work with ($\bar{x}$= 2.40), transport subsidy ($\bar{x}$= 2.66), security of farm business ($\bar{x}$= 2.11) and income diversification ($\bar{x}$= 2.19). This results contradicts Izuogu et. al, (2024) on the weak role motivation of extension service for attitudes towards certified rice seed. The lowest-ranked factors are security of farm business ($\bar{x}$=2.11), income diversification ($\bar{x}$= 2.19), and resources to work with ($\bar{x}$= 2.40), indicating comparatively lower perceived motivation.

Table 4: Extension workers' use of motivation measures for agripreneurial engagements with rural dwellers

Motivation	Mean	Std Dev.	Rank
Social and emotional support problems	3.42*	.319	1st
Recognition of good performance	3.33*	.520	2nd
Supervision of activities	3.08*	.508	3rd
Linkage to other institutions	2.88*	.612	4th
Provision of working refreshment when very necessary	2.87*	.521	5th
Compensation for services rendered	2.84*	.459	6th
Provision of technical information	2.82*	.444	7th
Provision of feedbacks	2.81*	.470	8th
Regular Training	2.74*	.412	9th
Schedule activities at close range to ensure participation	2.66*	.374	10th
Performance Appraisal	2.62*	.411	11th
Regularity of visit	2.60 *	349	12th
Inclusion in programme planning	2.56*	.302	13th
Provide mentoring opportunity for up scaling	2.46	.423	14th
Linkage with resources to work with	2.40	.554	15th
Income diversification	2.19	.519	16th
Security of farm business	2.11	.38 1	17th

Source: Field survey, 2025 ≥ 2.5= Used

Challenges Facing Extension Agents in Motivating Rural Dwellers for Agricultural Activities

Table 5 shows the challenges encountered by extension agents in motivating rural dwellers for agripreneurial development activities. The findings in Table 5 indicate that extension agents face several challenges in motivating rural dwellers to engage in agripreneurial activities. The most serious challenge was inadequate skills in human relation and emotional issues, suggesting that extension agents may lack the ability to understand and influence farmers' attitudes, perceptions, and entrepreneurial behaviour. This is crucial as found by Umar et. al., (2022), effective motivation of EWsqwas related to meaningful participation of women farmers in planning and implementation of agricultural practices. Other major constraints included low technical knowledge in some agricultural enterprises ($\bar{x}$= 3.04), poor funding and logistics support for regular field activities ($\bar{x}$= 2.99), discouragement or apathy with organizational environment ($\bar{x}$= 2.77), high illiteracy rate among rural dwellers ($\bar{x}$= 2.67), irregularity of visits and contact with farmers ($\bar{x}$= 2.51). These challenges may limit the of extension services in promoting agripreneurship by reducing farmers' access to relevant information, technical guidance, and motivation. Although unstable government policies, inadequate training facilities, fluctuation in market prices, and poor funding for activities were not considered serious constraints based on the study benchmark, they may still negatively affect extension service

delivery confirmed by (FMARD, 2020; NARLS, 2025; Owoade et. al., 2025). Overall, the results suggest that improving the socio-psychological and technical capacities of extension agents, enhancing logistics support, increasing farmer literacy, and ensuring regular extension-farmer interactions are essential for motivating rural dwellers for AAs.

Table 5: Challenges to extension agents' effectiveness in motivating rural dwellers for agripreneurial activities

Challenges	Mean	Std Dev.	Rank
Not skilled in social and emotional logical issues	3.36*	.346	1st
Low technical knowledge in some agricultural enterprises	3.04*	.417	2nd
Poor funding and logistics support for regular activities	2.99*	.429	3rd
Discouragement or apathy with organizational climate	2.77*	.512	4th
Illiteracy among rural dwellers	2.67*	.413	5th
Irregularity of visits and contact with farmers	2.53*	.355	6th
Unstable government policies	2.50	.365	7th
Inadequate training facilities	2.46	.429	8th
Fluctuation in market price	2.28	.366	9th
Poor remuneration	2.04	.315	10th

Mean ≥ 2.5= Serious
Source: Field survey, 2025

Relationship between Personal Characteristics of Extension Workers and their Use of Motivation Measures among Rural Dwellers

Table 6 presents the correlation analysis of motivation measures usage by extension agents and their personal characteristics. The findings in the table reveal that several personal characteristics of extension workers significantly influenced their use of motivating measures with rural dwellers in Edo State. Specifically, age ($r = 0.216$, $p = 0.019$), working experience ($r = 0.176$, $p = 0.046$), grade level ($r = 0.273$, $p = 0.009$), and monthly salary ($r = 0.222$, $p = 0.016$) all showed positive and significant relationships with the use of motivating measures. This implies that older, more experienced extension workers, those occupying higher grade levels, and earning higher salaries were more likely to employ motivational strategies in their interactions with rural dwellers. The positive relationships suggest that accumulated professional knowledge, increased responsibility, and better remuneration may enhance workers' commitment, confidence, and ability to use MMs to motivate RDs. However, the level

of education (r = 0.098, p = 0.376) was not significantly related to the use of motivating measures, indicating that formal educational attainment alone does not necessarily translate into greater application of motivational techniques. This contradicts Ahmed, et. al., (2025) in which education was a significant positive to motivation but agrees with respect to age. This finding suggests that practical experience and organizational factors may be more important to extension workers' motivational practices than years of education.

Table 6: Relationship between the personal characteristics of extension workers and their use of motivating measures with rural dwellers in Edo State

Variables	Correlation coefficient (r)	P-value	Decision
Age	0.216*	0.019	Significant
Working experience	0.176*	0.046	Significant
Years of education	0.098	0.376	Not significant
Grade level	0.273*	0.009	Significant
Salary per month	0.222*	0.016	Significant

Source: Field survey, 2025 * significance at 5%

Conclusion and Recommendations

The study revealed that extension workers frequently used motivation measures such as addressing the social and emotional needs of rural dwellers, recognizing good performance, and supervising agripreneurial activities. However, motivating the RDs for AAs was constrained by inadequate skills in social and technical areas, as well as insufficient funding. The findings further indicated that, older, more experienced extension workers and those with higher salary levels motivated the rural dwellers engage in agripreneurial activities more. Adequate institutional supports for extension personnel to ensure rural dwellers are motivated for agripreneurship.

Based on the findings the following are recommended:

1. Regular training and retraining programmes should be organized to enhance extension workers' competencies in human relations, motivation techniques, and technical aspects of relevant agricultural enterprises.
2. Government and extension organizations should provide adequate incentives, improved remuneration, and career development opportunities to motivate and retain experienced extension workers, thereby enhancing their capability in motivating rural agripreneurs.
3. Adequate financial and logistical resources should be provided to extension services to facilitate the effective implementation of motivation measures, including field visits, demonstrations, supervision, and agripreneurship development activities.
4. Existing farmers' groups and cooperatives should be regularly monitored and supported with relevant services, information, and market linkages to enhance their role in promoting agricultural entrepreneurship and sustain rural development initiatives.

References

Ahmed, A. G., Lawal, A. F., Sule, B. A., & Adedeji, S. O. (2025). Motivational factors for farm scale expansion among female farm managers in Niger State, Nigeria. *Journal of Agribusiness and Rural Development, 1*(75), 17–32.

Federal Ministry of Agriculture and Rural Development. (2020). *National agricultural extension policy for Nigeria*. FMARD.

Izuogu, C.U., Njoku, L.C., Azuamairo, G.C., Oparaojiaku, J.O., Orji, J.E., Njoku, J.I.K., Chinaka, I.C., Ankrumah, E. (2024). Farmers' attitudes toward certified rice seeds in Ebonyi State Journal of Agricultural Extension 28(3)124133

John, I. (2026, June 10). Reimagining African agriculture: From survival to strategic transformation. *World Food Prize Foundation*.

Kambhampati, H. B. (2026, June 11). Governor urges youth to embrace agriculture as a sector of innovation, entrepreneurship and nation-building. *The Times of India*.

McClelland, D. C. (1965). Toward a theory of motive acquisition. *American Psychologist, 20*(5), 321–333.

National Agricultural Extension and Research Liaison Services. (2025). *Communiqué of the 2025 National Agricultural Extension Review and Planning Meeting*. Ahmadu Bello University, Zaria.

Omoregbee, F. E., & Koyenikan, M. J. (2022). Frontline extension workers' satisfaction with organizational climate in Edo State, Nigeria. *Journal of Agriculture and Applied Biotechnology, 1*(1), 10–16. https://doi.org/10.52493/j.jaab.2022.2.44

Owoade, E. O., Oluyomi, S. M., Rabi, A. S., & Umar, Y. A. (2025). Performance of extension service of the Agricultural Development Project in Yobe State, Nigeria. *Journal of Agricultural Extension, 29*(4).

Retno, W., & Khilma, F. R. (2025). Motivation of the young farmer in agricultural entrepreneurship. *E3S Web of Conferences, 665*, 01027. https://doi.org/10.1051/e3sconf/202566501027

Sa'adu, M., Man, N., Shah, J. A., Kamarulzaman, N. H., & Tafida, A. A. (2022). Factors affecting use of information communication technologies among extension agents in North-East, Nigeria. *Journal of Agricultural Extension, 26*(1). https://doi.org/10.4314/jae.v26i1.5

Sarie, F., Mohammad, W., Jamin, N. S., & Ramlan, W. (2023). The influence of demographic factors, farmer knowledge, and motivational factors on the adoption of agricultural technology innovation: A case study on dairy farmers in South Bangka. *West Science Agro, 1*(1), 28–35. https://doi.org/10.58812/wsa.v1i01.374

Steers, R. M., & Braunstein, D. N. (1976). A behaviorally based measure of manifest needs in work settings. *Journal of Vocational Behavior, 9*(2), 251–266.

Tafida, I., Yusuf, A. K., Kabir, A. M., & Abdullahi, A. (2021). Assessment of training needs and competence level of extension workers in Kano State, Nigeria. *FUDMA Journal of Sciences, 5*(1), 424–435.

Tafida, I., Bulus, T. V., & Nazifi, B. (2024). Extension service delivery among agricultural extension agents in Kaduna State, Nigeria. *Journal of Agricultural Extension, 28*(1), 29–39. https://doi.org/10.4314/jae.v28i1.4

Tamsan, H., & Yusriadi, Y. (2022). Quality of agricultural extension on productivity of farmers: Human capital perspective. *Uncertain Supply Chain Management, 10*(2), 625–636. https://doi.org/10.5267/j.uscm.2021.11.003

Umar, A. I., Man, N., Mohammed, N. B., & Kamarulzaman, N. H. (2022). Rural women farmers' participation in planning and implementation of agricultural

practices in North Eastern Nigeria. *Journal of Agricultural Extension, 26*(1). http://www.ajol.info/index.php/jae

Windon, S., Henzi, C., & Schmidt, C. (2025). Farmers' motivation for learning and developing new skills. *Advancements in Agricultural Development, 6*(2), 56–72. https://doi.org/10.37433/aad.v6i2.565

Windon, S. R., & Robotham, D. J. (2021). The relationship between farmers' quality of life and their leadership competencies. *Advancements in Agricultural Development, 2*(2), 5–72. https://doi.org/10.37433/aad.v2i2.105

Yurisinthae, E., & Yusra, A. H. A. (2023). Performance of agricultural extension workers and their impact on maize farmer behavior on peatlands. In Y. K. Dewi et al. (Eds.), *Proceedings of the International Agriculture Meeting (IAM 2023): Sciences research advances in biological sciences*. https://doi.org/10.2991/978-94-6463-510-2_5